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**Kevin Wright**

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who, well, didn't do much this time, since Paul Lee provided the thing already scanned and compiled into a PDF! (Thanks!). Go visit his website: <http://www.iluvmyrx7.com/index.htm> Lots of RX-7 goodness there.

There are several ways to get around in the document. I have provided Bookmarks to all the sections, and thumbnails are also provided in the Thumbnails side bar.

I have also included a label for the spine of a binder, for those who wish to print out all the pages and keep a dead-tree edition handy.☺

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If you really want to send me money, email me and I'll tell you where to send it, but it's not necessary. Consider this payback for all the good advice and information gleaned from the various RX-7 email lists!

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09/16/03

## SUSPENSION

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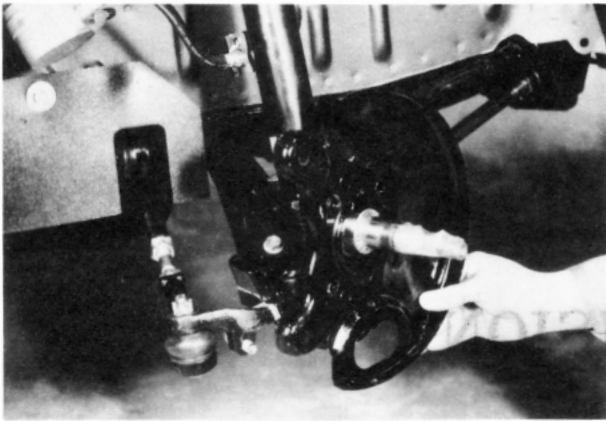


Fig. 13-1

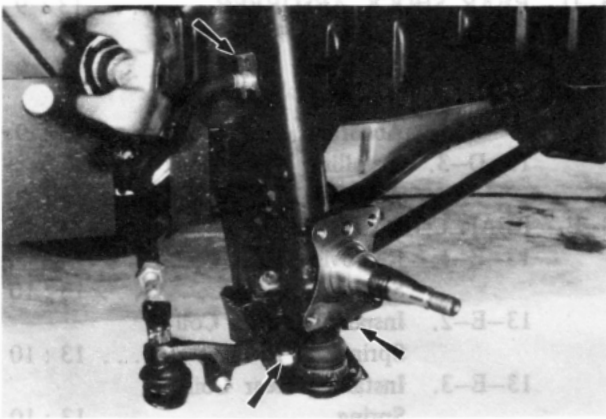


Fig. 13-2

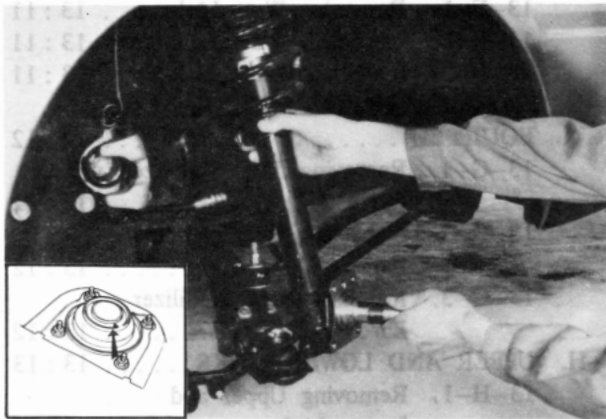


Fig. 13-3

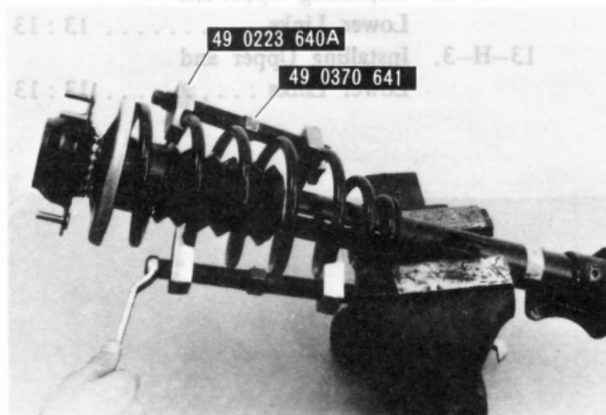


Fig. 13-4

## 13-A. FRONT SHOCK ABSORBER

### 13-A-1. Removing Front Shock Absorber

1. Raise the front end of the vehicle and support it with stands.
2. Remove the wheel hub assembly from the front shock absorber as described in Par. 12-E-2.
3. Remove the backing plate.

4. Remove the flexible hose attaching clip.
5. Remove the bolts attaching the knuckle arm to absorber.

6. Remove the absorber mounting block attaching nuts and remove the shock absorber assembly.

#### Note:

Before loosening the attaching nuts, note the triangle marked position.

7. Hold the shock absorber mounting block in a vise and loosen the lock nut few turns. **Do not remove it.**
8. Compress the coil spring using the coil spring compressor (49 0223 640A and 49 0370 641).

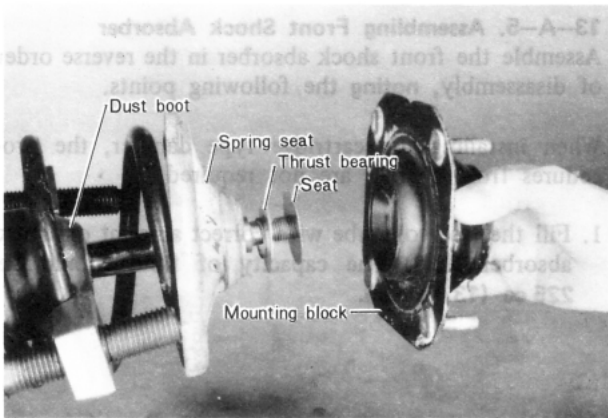


Fig. 13-5



Fig. 13-6

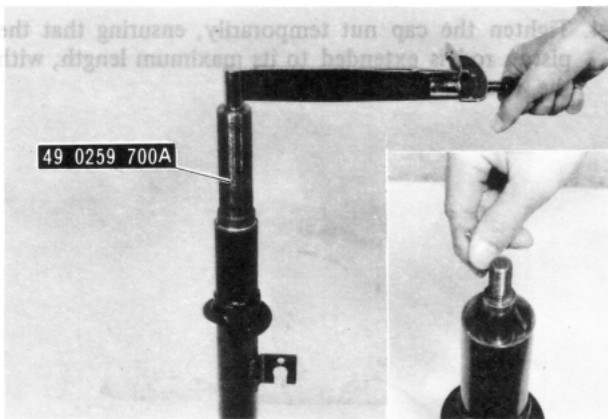


Fig. 13-7

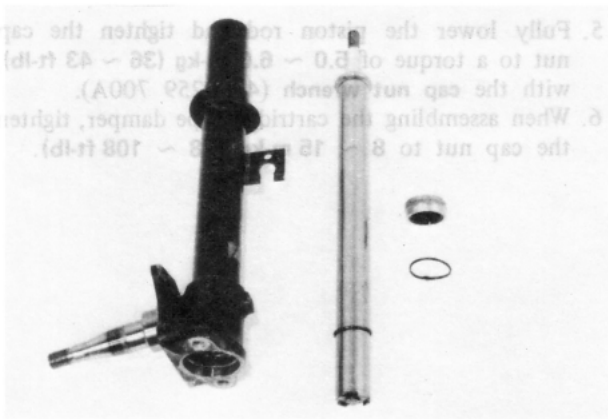


Fig. 13-8

9. Remove the following parts from the shock absorber.

- 1) Lock nut and washer
- 2) Mounting block and adjusting plate
- 3) Seat
- 4) Thrust bearing
- 5) Spring upper seat
- 6) Coil spring
- 7) Dust boot
- 8) Bound bumper

**13-A-2. Inspection before Disassembling Front Shock Absorber**

1. To test the shock absorber, hold the shock absorber in an upright position and work the piston rod up and down in its full length of travel, four or five times.  
If a strong resistance is felt due to hydraulic pressure, the shock absorber is functioning properly. If no resistance is felt or there is a sudden free movement in travel, the shock absorber should be repaired.
2. If excessive amount of fluid is evident on the exterior of the shock absorber, the shock absorber should be repaired.

**13-A-3. Disassembling Front Shock Absorber**

1. Hold the reservoir tube in a vise.
2. Remove the cap.
3. Remove the cap nut and seal assembly using the cap nut wrench (49 0259 700A).
4. Remove the "O" ring installed on the piston rod guide with a suitable tool.
5. Pull out the piston rod and pressure tube assembly from the reservoir tube.

**Note:**

Do not remove the piston rod, guide and base valve from the pressure tube as they are available only in set.

**13-A-4. Inspecting Front Shock Absorber**

Inspect the disassembled parts, and repair or replace any part found defective.

1. Inspect the reservoir tube for deformation, crack or damage.
2. Inspect the mounting block for crack, deterioration or any damage.
3. Inspect the mounting bearing for slackness or abnormal noise by rotate it in axial direction.
4. Inspect the coil spring for signs of fatigue, crack or any damage.
5. Inspect the cap nut for damaged threads, and inspect the oil seal lip for wear or damage.



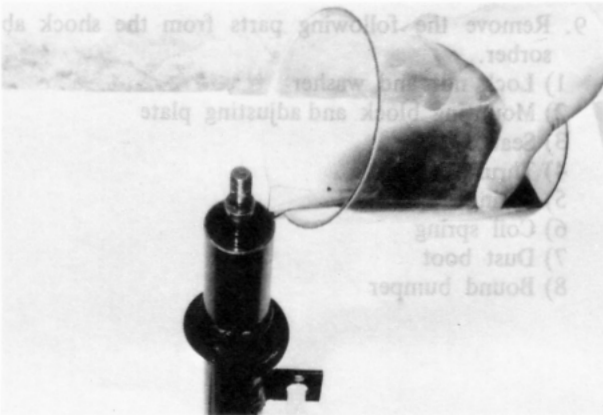


Fig. 13-9



Fig. 13-10



Fig. 13-11

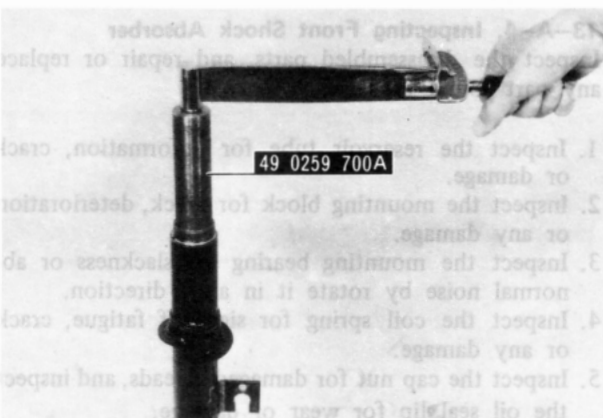


Fig. 13-12

### 13-A-5. Assembling Front Shock Absorber

Assemble the front shock absorber in the reverse order of disassembly, **noting** the following points.

When installing the cartridge type damper, the procedures from 1 to 5 are not required.

1. Fill the reservoir tube with correct amount of shock absorber fluid. The capacity of fluid should be **225 cc (13.7 cu-in.)**.

2. Install the **pilot** (49 0370 590) over the threads of the piston rod.
3. Apply grease to the lip of the oil seal, and insert the cap nut carefully through the pilot and onto the piston rod.

4. Tighten the cap nut temporarily, ensuring that the piston rod is extended to its maximum length, with the **wrench** (49 0259 702).

5. Fully lower the piston rod and tighten the cap nut to a torque of **5.0 ~ 6.0 m-kg (36 ~ 43 ft-lb)**, with the **cap nut wrench** (49 0259 700A).
6. When assembling the cartridge type damper, tighten the cap nut to **8 ~ 15 m-kg (58 ~ 108 ft-lb)**.

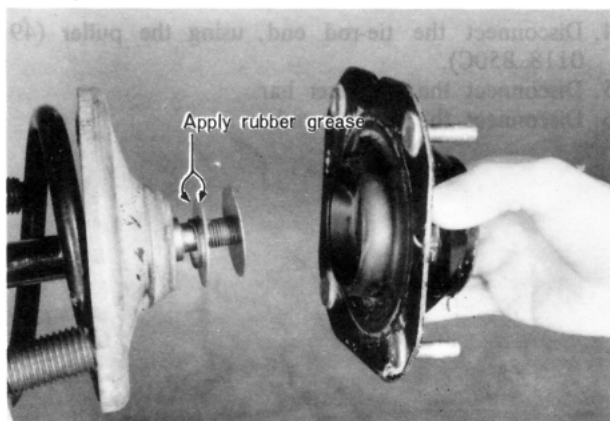


Fig. 13-13

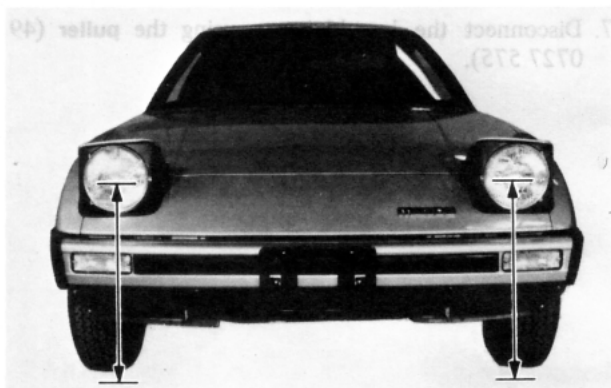


Fig. 13-14

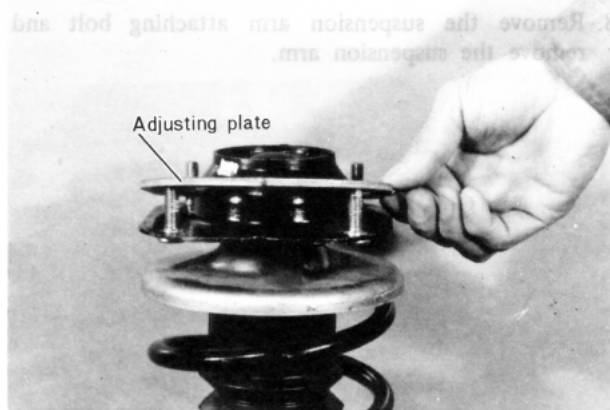


Fig. 13-15

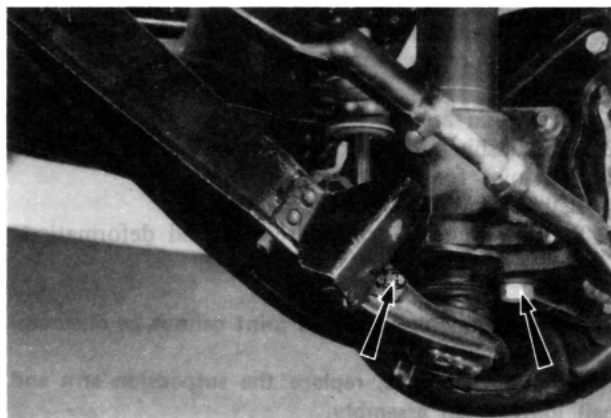


Fig. 13-16

### 13-A-6. Installing Front Shock Absorber

Install the shock absorber in the reverse order of removing, noting the following points.

1. When installing the thrust bearing, apply a thin coat of rubber grease to the bearing on both sides.
2. When installing the mounting block to the vehicle, place the triangle mark to its original position. If the mounting block is replaced, adjust the wheel alignment as described in Par. 10-D.
3. The lower end of the coil spring should be butt against the formed shoulder in the spring seat.
4. After installing the front shock absorber to the vehicle, measure the distance between the level ground and head light on both sides. The both difference should be within 15 mm (0.59 in). If it is not within the specification, adjust the difference by inserting the adjusting plate between the mounting block and suspension tower.

#### Note:

Do not use more than two adjusting plates at one side.

5. Adjust the front wheel bearing preload to specified value.

#### Specified tightening torques:

##### Piston rod to mounting block

6.5 ~ 8.2 m-k<sub>g</sub> (47 ~ 59 ft-lb)

##### Mounting block to suspension tower

2.3 ~ 3.0 m-k<sub>g</sub> (17 ~ 22 ft-lb)

##### Steering knuckle to caliper mounting adaptor

3.5 ~ 4.5 m-k<sub>g</sub> (25 ~ 33 ft-lb)

##### Caliper mounting adaptor to caliper bracket

4.5 ~ 5.5 m-k<sub>g</sub> (33 ~ 40 ft-lb)

##### Knuckle arm to shock absorber

6.0 ~ 7.0 m-k<sub>g</sub> (43 ~ 51 ft-lb)

### 13-B. FRONT SUSPENSION ARM

#### 13-B-1. Removing Front Suspension Arm

1. Raise the front end of the vehicle and support it with stands.
2. Remove the front wheel.
3. Remove the knuckle arm attaching bolts to the steering knuckle.

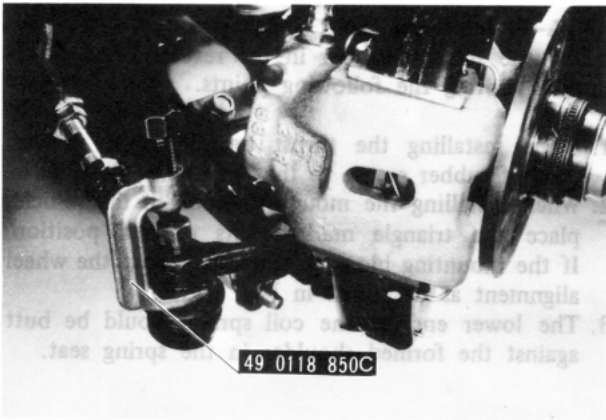


Fig. 13-17

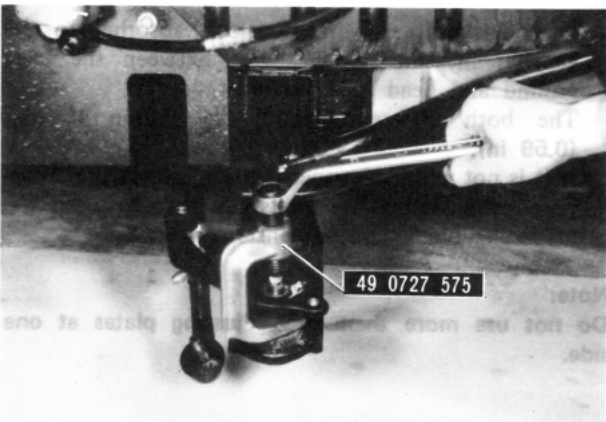


Fig. 13-18

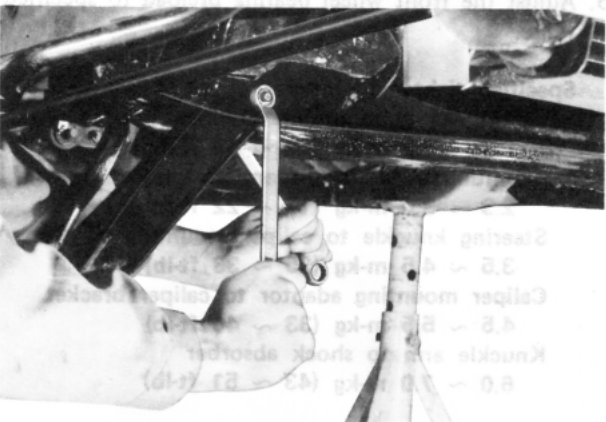


Fig. 13-19

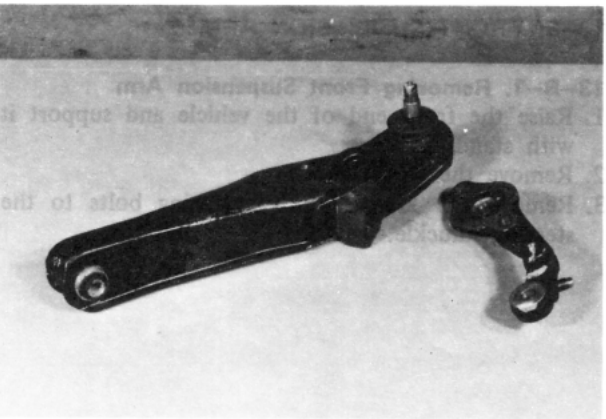


Fig. 13-20

4. Disconnect the tie-rod end, using the puller (49 0118 850C).
5. Disconnect the stabilizer bar.
6. Disconnect the tension rod.

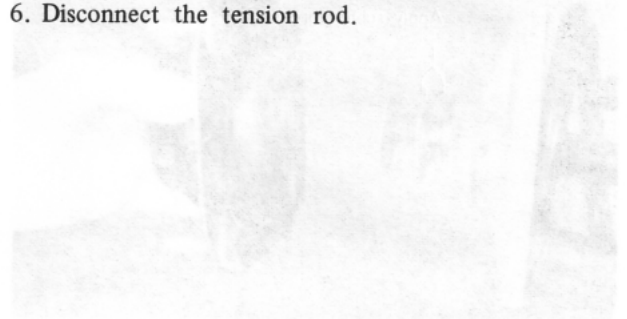


Fig. 13-17

7. Disconnect the knuckle arm, using the puller (49 0727 575).

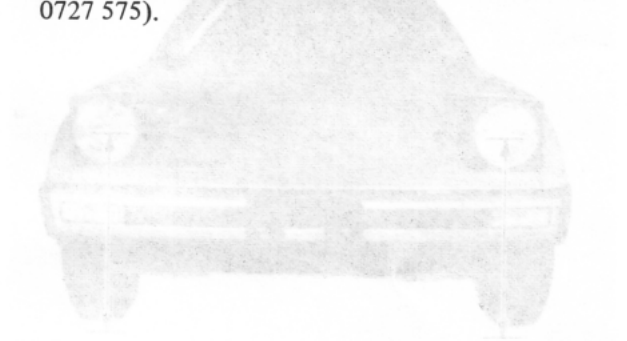


Fig. 13-18

8. Remove the suspension arm attaching bolt and remove the suspension arm.



Fig. 13-19

### 13-B-2. Inspecting Front Suspension Arm

Inspect the removed parts, and replace any part found defective.

1. Suspension arm for damage or deformation
2. Arm bushing for deformation or damage
3. Ball joint for looseness or damage
4. Ball joint dust cover for damage
5. Steering knuckle arm for cracks and deformation

#### Note:

The suspension arm and ball joint cannot be disassembled from each other.

If either is defective, replace the suspension arm and ball joint as an assembly.

Fig. 13-18

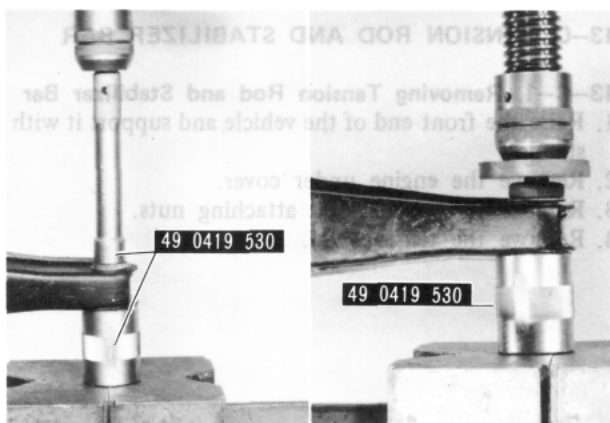


Fig. 13-21

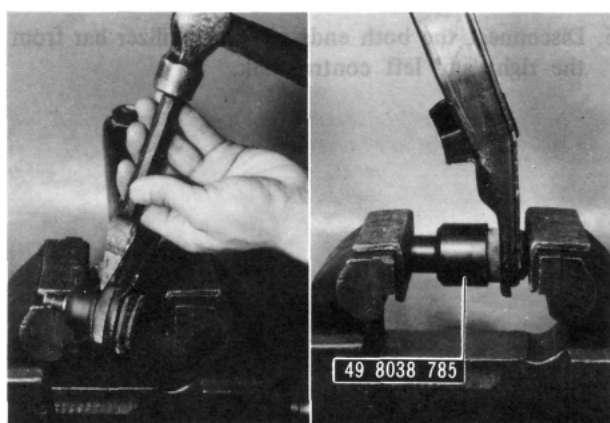


Fig. 13-22



Fig. 13-23

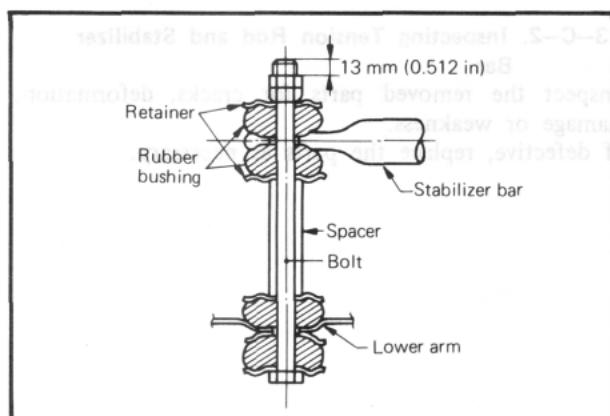


Fig. 13-24

### 13-B-3. Replacing Front Suspension Arm Bushing

1. Press out the bushing toward the front using the **puller and installer (49 0419 530)**.
2. Press in the new bushing into the suspension arm from front side, using the **puller and installer (49 0419 530)**.

#### Note:

When pressing in the bushing, there must be no lubricant on the bushing or suspension arm bore.

### 13-B-4. Replacing Ball Joint Dust Boot

1. Remove the dust boot, using the suitable tool.
2. Fill the lithium grease to the new dust boot and press in the dust boot to the ball joint, using **dust boot installer (49 8038 785)**.

### 13-B-5. Installing Front Suspension Arm

Install the front suspension arm in the reverse order of removal, **noting** the following points.

1. When installing the suspension arm to the cross member, tighten the bolt lightly, and after lowering the vehicle, jounce it few times to allow the suspension to settle down, and then tighten the bolt to the specified torque.
2. The tightening torques are as follows:
  - Ball joint to knuckle arm**  
6.0 ~ 7.0 m·kg (43 ~ 51 ft·lb)
  - Suspension arm to cross member**  
4.0 ~ 5.5 m·kg (29 ~ 40 ft·lb)
  - Tension rod to suspension arm**  
5.5 ~ 6.9 m·kg (40 ~ 50 ft·lb)
  - Knuckle arm to shock absorber**  
6.0 ~ 7.0 m·kg (43 ~ 51 ft·lb)
3. When installing the stabilizer bar to the suspension arm, tighten the nut to the specification in the illustration.



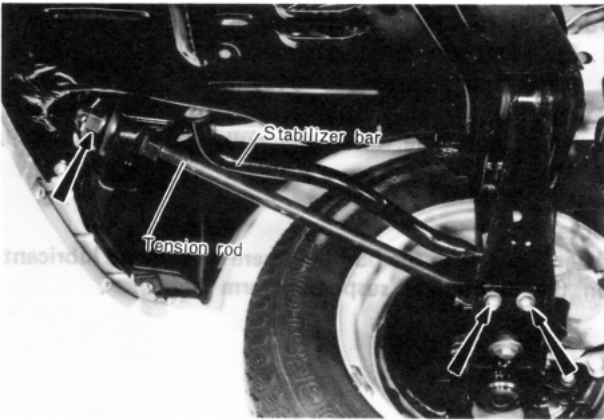


Fig. 13-25



Fig. 13-26



Fig. 13-27

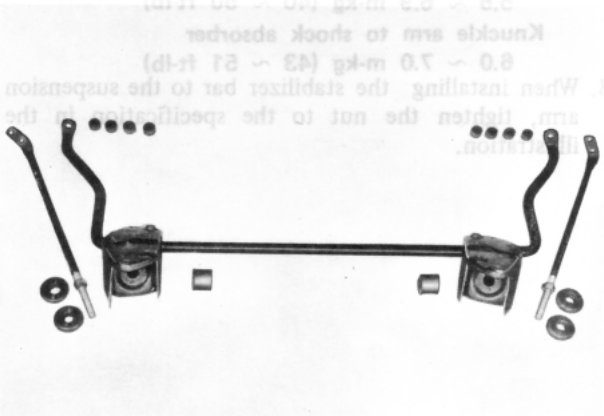


Fig. 13-28

**13-C. TENSION ROD AND STABILIZER BAR**

**13-C-1. Removing Tension Rod and Stabilizer Bar**

1. Raise the front end of the vehicle and support it with stands.
2. Remove the engine under cover.
3. Remove the tension rod attaching nuts.
4. Remove the tension rod.

5. Disconnect the both ends of the stabilizer bar from the right and left control link.

6. Remove the stabilizer bar support plates and rubber bushings.
7. Remove the right and left brackets mounting the tension rod and stabilizer bar, together with the stabilizer bar.

**13-C-2. Inspecting Tension Rod and Stabilizer Bar**

Inspect the removed parts for cracks, deformation, damage or weakness. If defective, replace the parts as necessary.



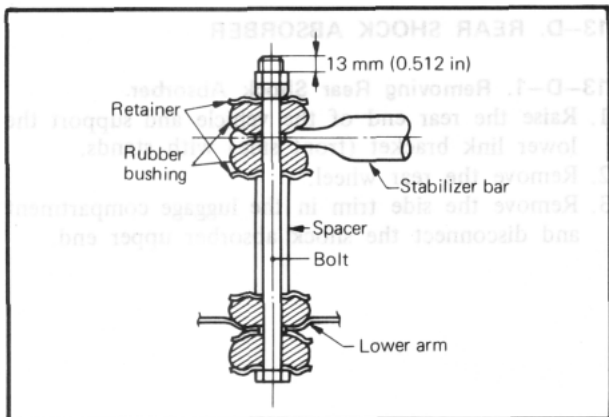


Fig. 13-29

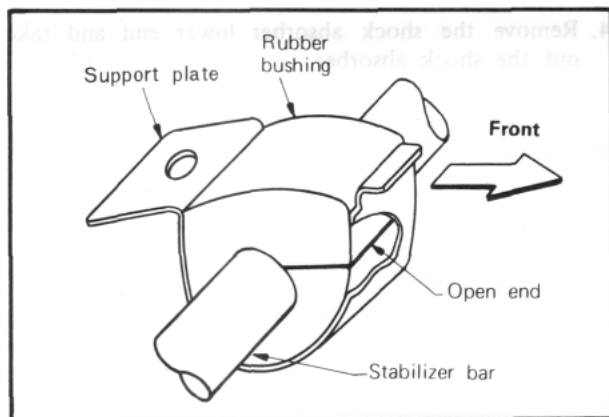


Fig. 13-30

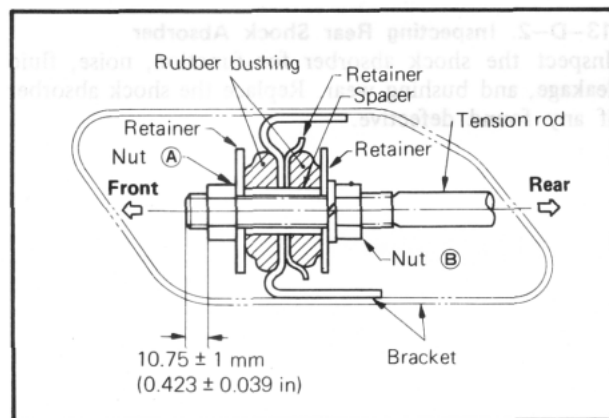


Fig. 13-31

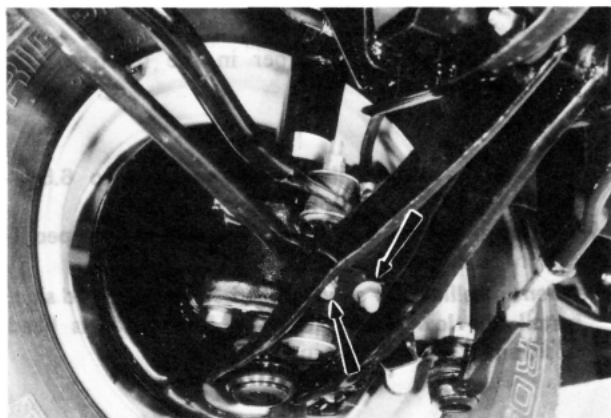


Fig. 13-32

### 13-C-3. Installing Tension Rod and Stabilizer Bar

Install the tension rod and stabilizer bar in the reverse order of removing, **noting** the following points.

1. Install the brackets to the frame together with the stabilizer bar and tighten the bracket attaching bolts.
2. Install the both ends of the stabilizer bar to the control link and tighten the nuts to the specification as shown in figure.

3. Install the stabilizer rubber bushing with the support plate, so that the open end of the bushing toward the front.  
Tighten the support plate attaching bolt temporarily.

4. Install the front end of the tension rod to the bracket and tighten the nut **(A)** to the specification as shown in figure.  
Then, tighten the nut **(B)** to the specified torque.  
When installing the rubber bushing on the tension rod, face the flat surface of the bushing toward the bracket.

**Tightening torque of nut (B):**  
11 ~ 15 m-k<sub>g</sub> (80 ~ 108 ft-lb)

5. Install the rear end of the tension rod to the suspension arm and tighten the nuts to the specification.

**Tightening torque:**  
5.5 ~ 6.9 m-k<sub>g</sub> (40 ~ 50 ft-lb)

6. Lower the vehicle and jounce it few times. Then, finally tighten the support plate of the stabilizer bar.

**Tightening torque:**  
5.5 ~ 6.9 m-k<sub>g</sub> (40 ~ 50 ft-lb)

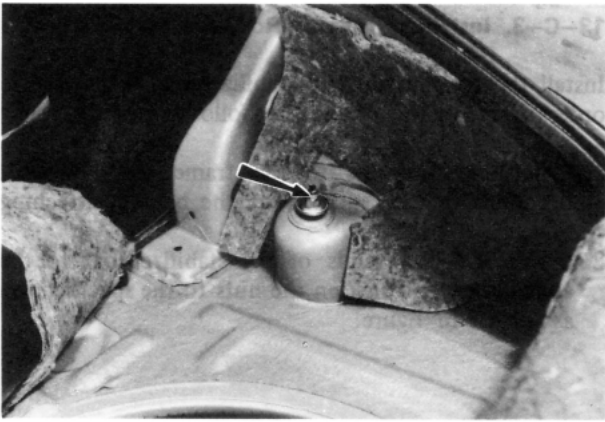


Fig. 13-33

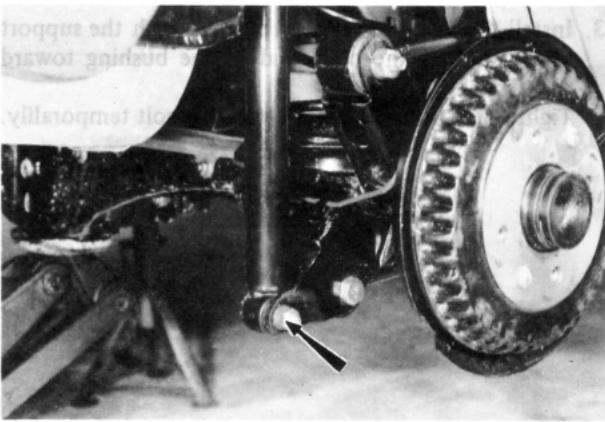


Fig. 13-34

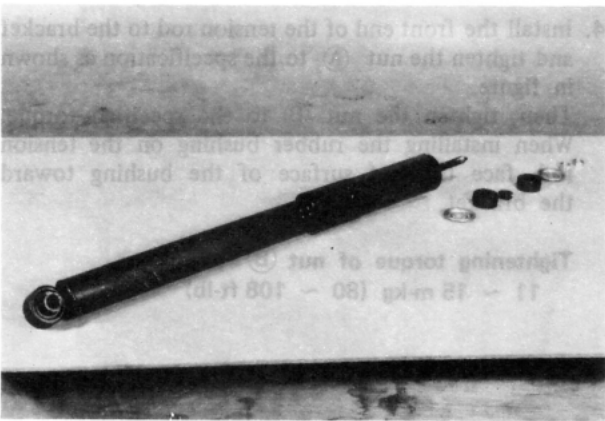


Fig. 13-35

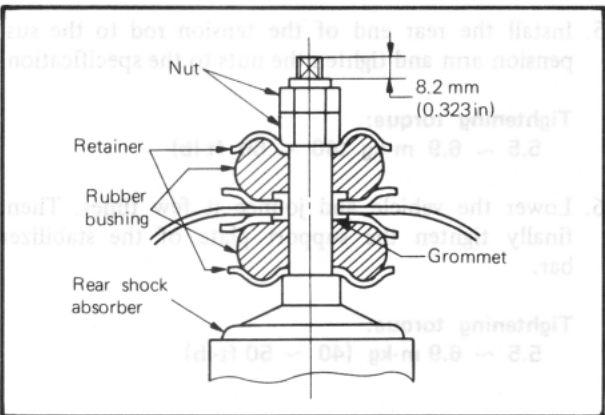


Fig. 13-36

## 13-D. REAR SHOCK ABSORBER

### 13-D-1. Removing Rear Shock Absorber

1. Raise the rear end of the vehicle and support the lower link bracket (front side) with stands.
2. Remove the rear wheel.
3. Remove the side trim in the luggage compartment and disconnect the shock absorber upper end.

4. Remove the shock absorber lower end and take out the shock absorber.

### 13-D-2. Inspecting Rear Shock Absorber

Inspect the shock absorber for function, noise, fluid leakage, and bushing wear. Replace the shock absorber if any found defective.

### 13-D-3. Installing Rear Shock Absorber

Install the rear shock absorber in the reverse order of removal.

#### Note:

- a) Tighten the shock absorber lower end to 6.5 ~ 8.2 m-kg (47 ~ 59 ft-lb).
- b) Tighten the shock absorber upper end to the specification as shown in figure.
- c) When installing the shock absorber on left hand side, install the lower side attaching bolt with its head positioned toward the inside.

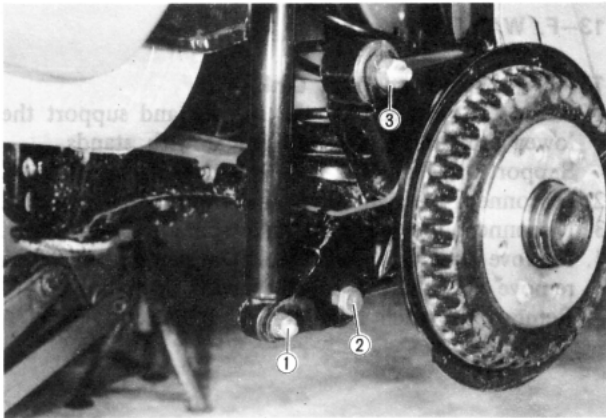


Fig. 13-37

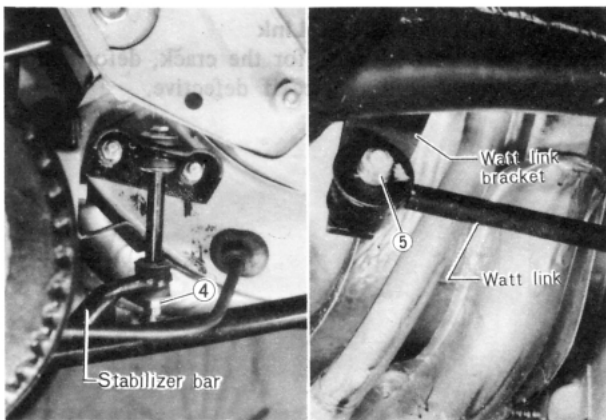


Fig. 13-38

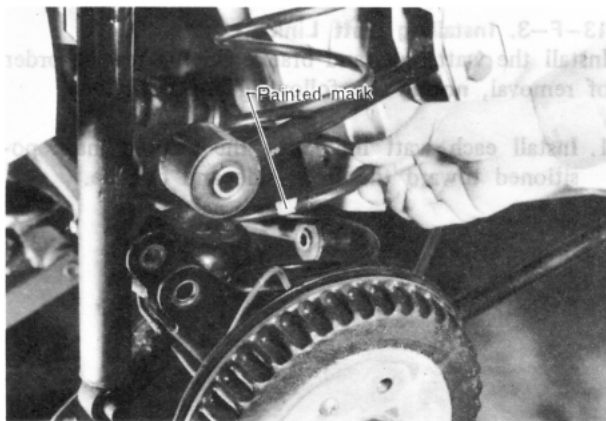


Fig. 13-39



Fig. 13-40

### 13-E. REAR COIL SPRING

#### 13-E-1. Removing Rear Coil Spring

1. Raise the rear end of the vehicle and support the lower link brackets (front sides) with stands. Support the rear axle casing with a jack.
2. Remove the rear wheel.
3. Disconnect the following portions from the rear axle casing.
  - 1) Shock absorber lower end
  - 2) Lower link rear end
  - 3) Upper link rear end

- 4) Stabilizer bar front ends (if equipped)
- 5) Right and left watt links at rear axle casing

4. Carefully lower the rear axle casing on the jack and remove the coil spring and rubber seat.

#### 13-E-2. Inspecting Rear Coil Spring

Check the coil spring for crack or any damage. If necessary, replace the coil spring with new one.

#### 13-E-3. Installing Rear Coil Spring

Install the rear coil spring in the reverse order of removal, **noting** the following points.

1. Install the coil spring with the painted mark positioned toward the rear axle casing.
2. Tighten the front ends of the stabilizer bar to the specifications as shown in Fig. 13-29.
3. When installing the shock absorber on left hand side, install the lower side attaching bolt with its head positioned toward the inside.

4. When installing the upper link, lower link, rear shock absorber lower end and watt links, tighten the bolts and nuts temporarily, and after lowering the vehicle, tighten them at specified torque.

#### Tightening torque:

**Upper and lower links to bracket**

7.7 ~ 10.5 m-kg (56 ~ 76 ft-lb)

**Watt link to bracket on rear axle casing**

6.5 ~ 8.2 m-kg (47 ~ 59 ft-lb)

**Rear shock absorber lower end to bracket**

6.5 ~ 8.2 m-kg (47 ~ 59 ft-lb)

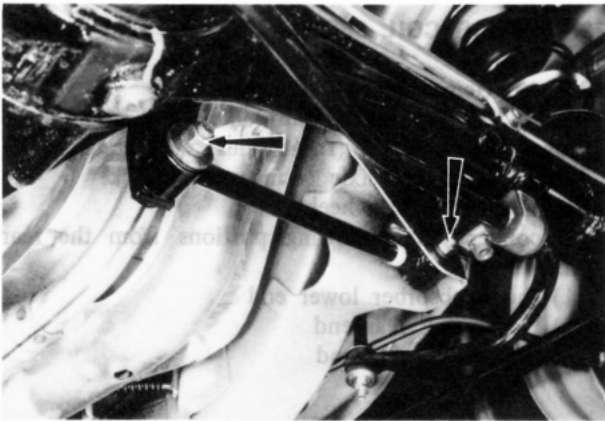


Fig. 13-41

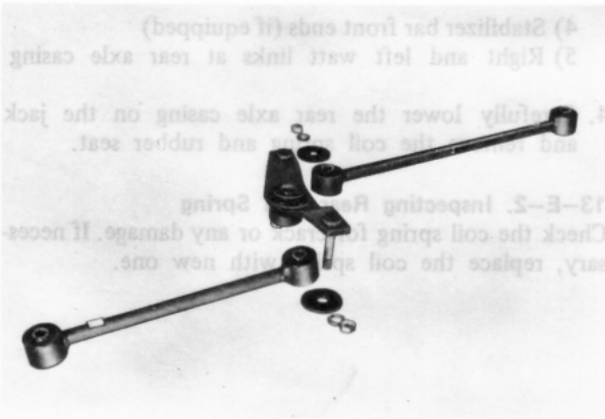


Fig. 13-42

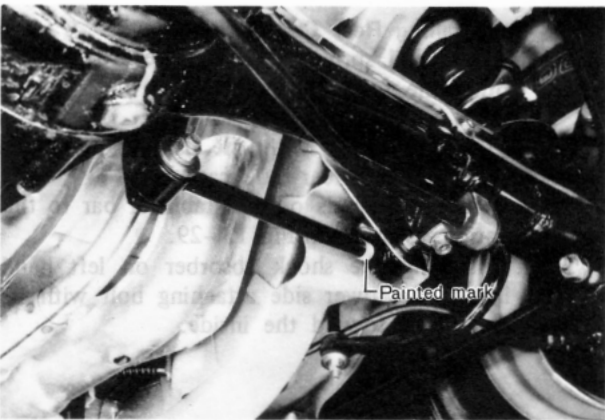


Fig. 13-43

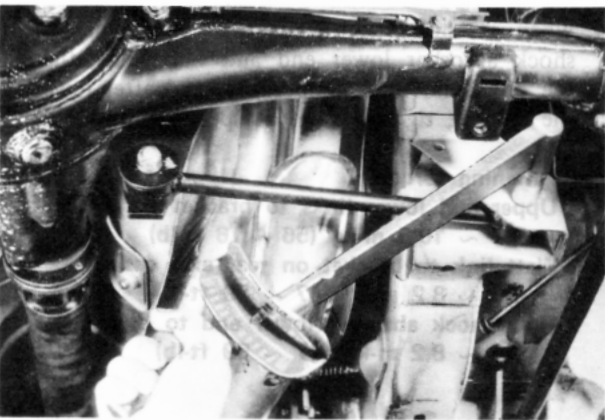


Fig. 13-44

## 13-F. WATT LINK

### 13-F-1. Removing Watt Link

1. Raise the rear end of the vehicle and support the lower link brackets (front sides) with stands. Support the rear axle casing with a jack.
2. Disconnect the right watt link from the body frame.
3. Disconnect the left watt link from the body frame.
4. Remove the watt link bracket attaching nut. Then remove the bracket together with both links.
5. Remove the each link from the bracket.

### 13-F-2. Inspecting Watt Link

Inspect the removed parts for the crack, deformation, or any damage, and replace if defective.

### 13-F-3. Installing Watt Link

Install the watt links and bracket in the reverse order of removal, **noting** the following points.

1. Install each watt link with the painted mark positioned toward the front side and outside.

2. When installing the removed parts, tighten them temporarily, and after lowering the vehicle, tighten them to specified torque.

#### Tightening torque:

- Watt link to bracket on body frame  
6.5 ~ 8.2 m-kg (47 ~ 59 ft-lb)
- Watt link to bracket on rear axle casing  
6.5 ~ 8.2 m-kg (47 ~ 59 ft-lb)
- Watt link bracket to rear axle casing  
7.7 ~ 10.5 m-kg (56 ~ 76 ft-lb)



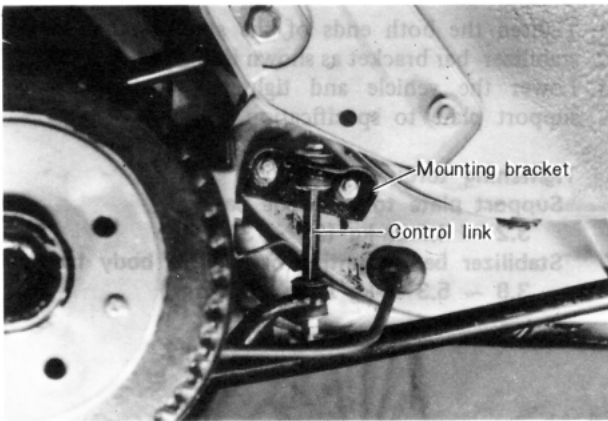


Fig. 13-45

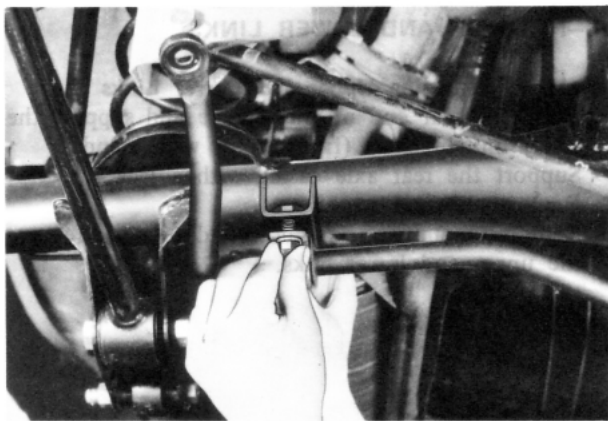


Fig. 13-46

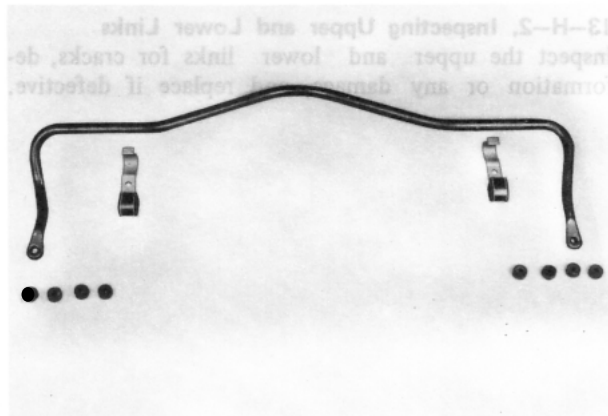


Fig. 13-47

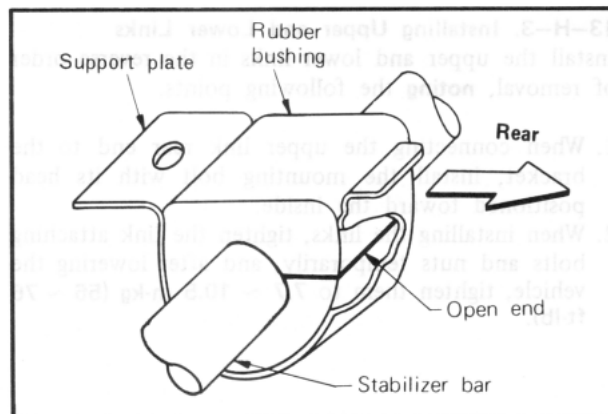


Fig. 13-48

**13-G. REAR STABILIZER BAR (IF EQUIPPED)**

**13-G-1. Removing Rear Stabilizer Bar**

1. Raise the rear end of the vehicle and support the lower link brackets (front sides) with stands. Support the rear axle casing with a jack.
2. Disconnect the stabilizer bar both ends.
3. If necessary, remove the stabilizer bar mounting bracket.

4. Remove the stabilizer bar support plates and rubber bushings.
5. Remove the stabilizer bar.

**13-G-2. Inspecting Rear Stabilizer Bar**

Inspect the removed parts for crack, deformation or any damage, and replace if defective.

**13-G-3. Installing Rear Stabilizer Bar**

Install the rear stabilizer bar in the reverse order of removal, **noting** the following points.

1. Install the rubber bushing with the support plate so that the open end of the bushing toward the rear.
2. Temporarily tighten the support plate attaching bolt.



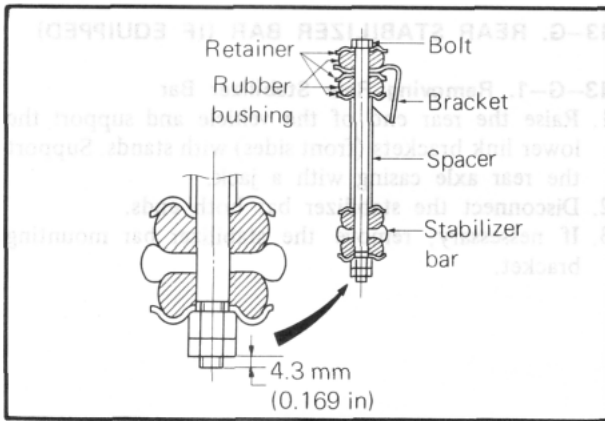


Fig. 13-49

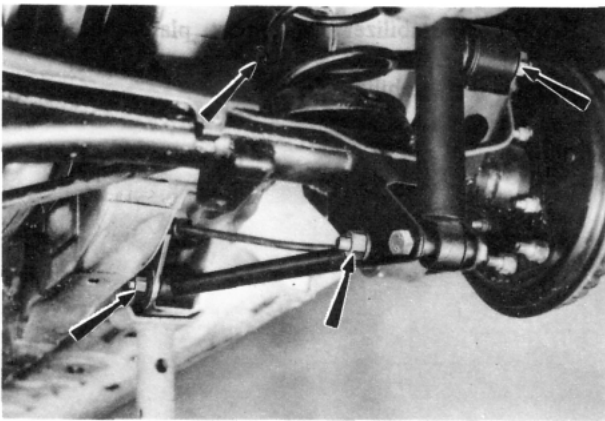


Fig. 13-50

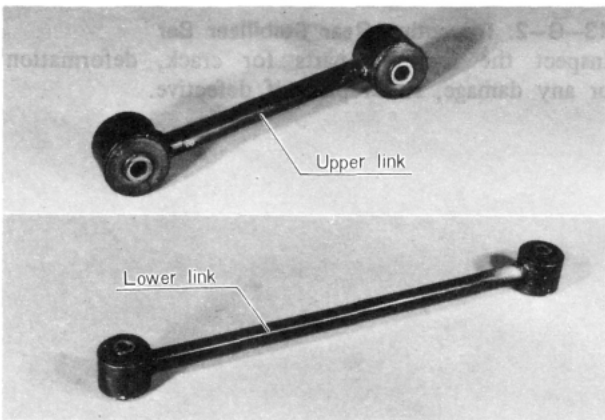


Fig. 13-51



Fig. 13-52

3. Tighten the both ends of the stabilizer bar to the stabilizer bar bracket as shown in figure.
4. Lower the vehicle and tighten the stabilizer bar support plate to specification.

**Tightening torques:**

**Support plate to rear axle casing**

3.2 ~ 4.7 m-kg (23 ~ 34 ft-lb)

**Stabilizer bar mounting bracket to body frame**

3.8 ~ 5.3 m-kg (27 ~ 38 ft-lb)

### 13-H. UPPER AND LOWER LINKS

#### 13-H-1. Removing Upper and Lower Links

1. Raise the rear end of the vehicle and support the lower link brackets (front sides) with stands. Support the rear axle casing with a jack.
2. Remove the rear wheel.
3. Remove the link attaching bolts and nuts, and remove the upper and lower links.

#### 13-H-2. Inspecting Upper and Lower Links

Inspect the upper and lower links for cracks, deformation or any damage, and replace if defective.

#### 13-H-3. Installing Upper and Lower Links

Install the upper and lower links in the reverse order of removal, **noting** the following points.

1. When connecting the upper link rear end to the bracket, install the mounting bolt with its head positioned toward the inside.
2. When installing the links, tighten the link attaching bolts and nuts temporarily, and after lowering the vehicle, tighten them to 7.7 ~ 10.5 m-kg (56 ~ 76 ft-lb).